Using Automator and Services to Integrate with Mac OS X

Session 404

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

At the convention center, a movie will be placed here

Using Automator and Services to Integrate with Mac OS X

Emilie Kim
Automator Engineer

workflows

actions

workflows

actions

What Is Automator?

What Is Automator?

What Is Automator?

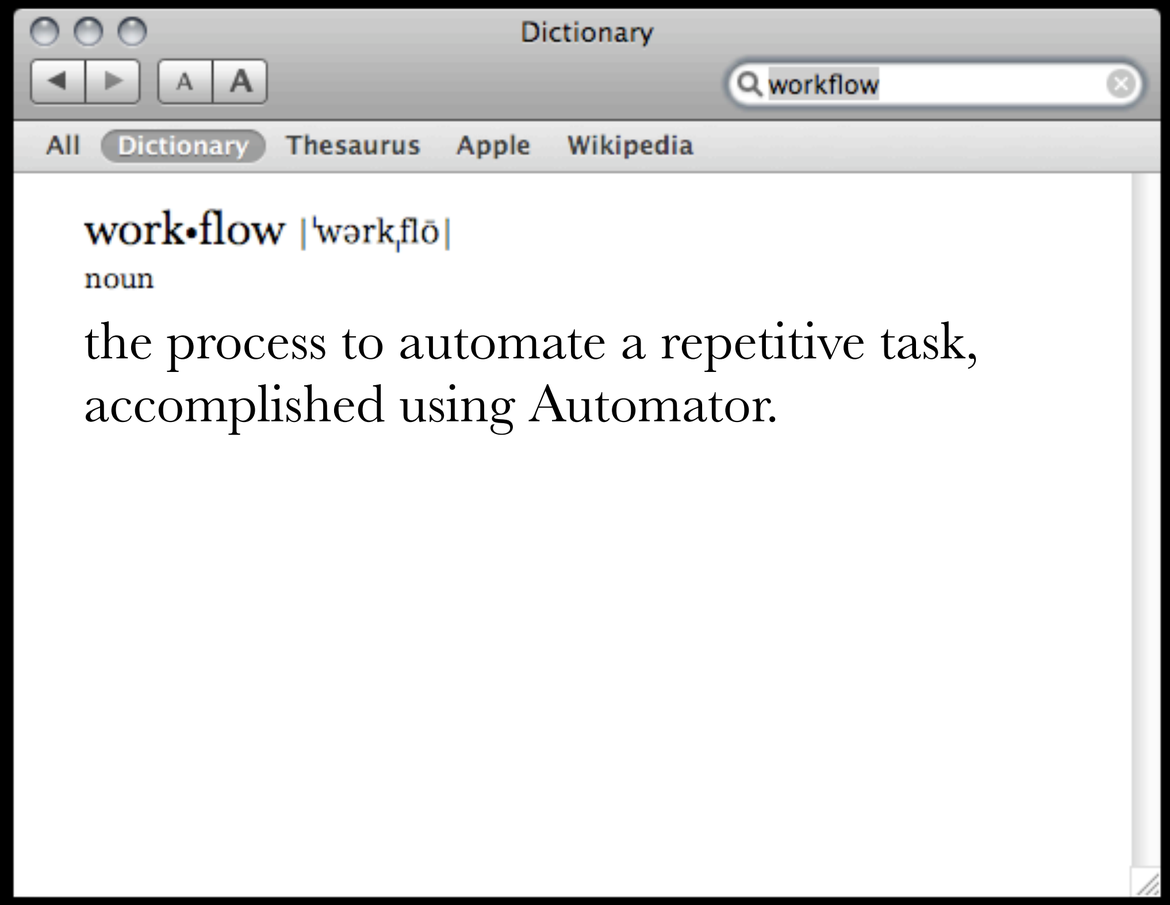
- Automate repetitive tasks

What Is Automator?

- Automate repetitive tasks
- Customize your system

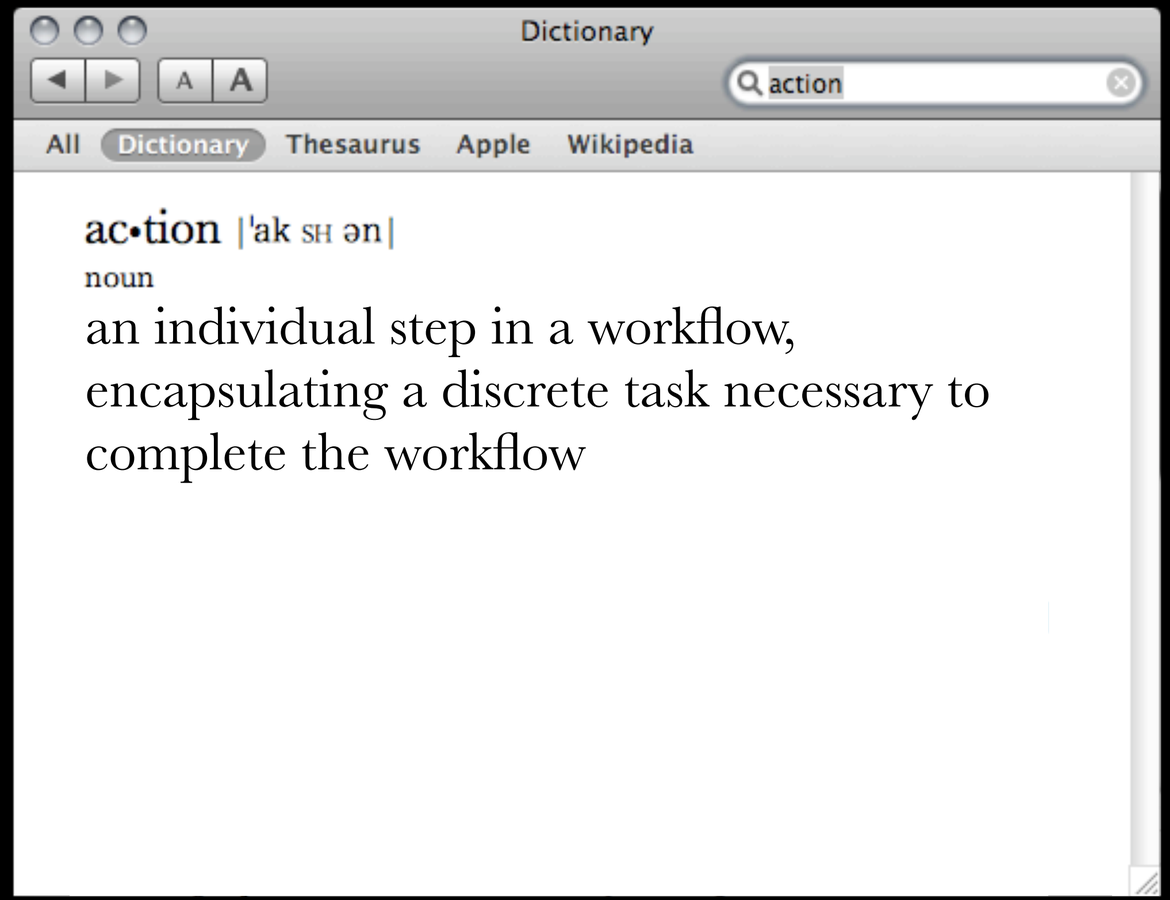
What Is Automator?

- Automate repetitive tasks
- Customize your system
- Workflow



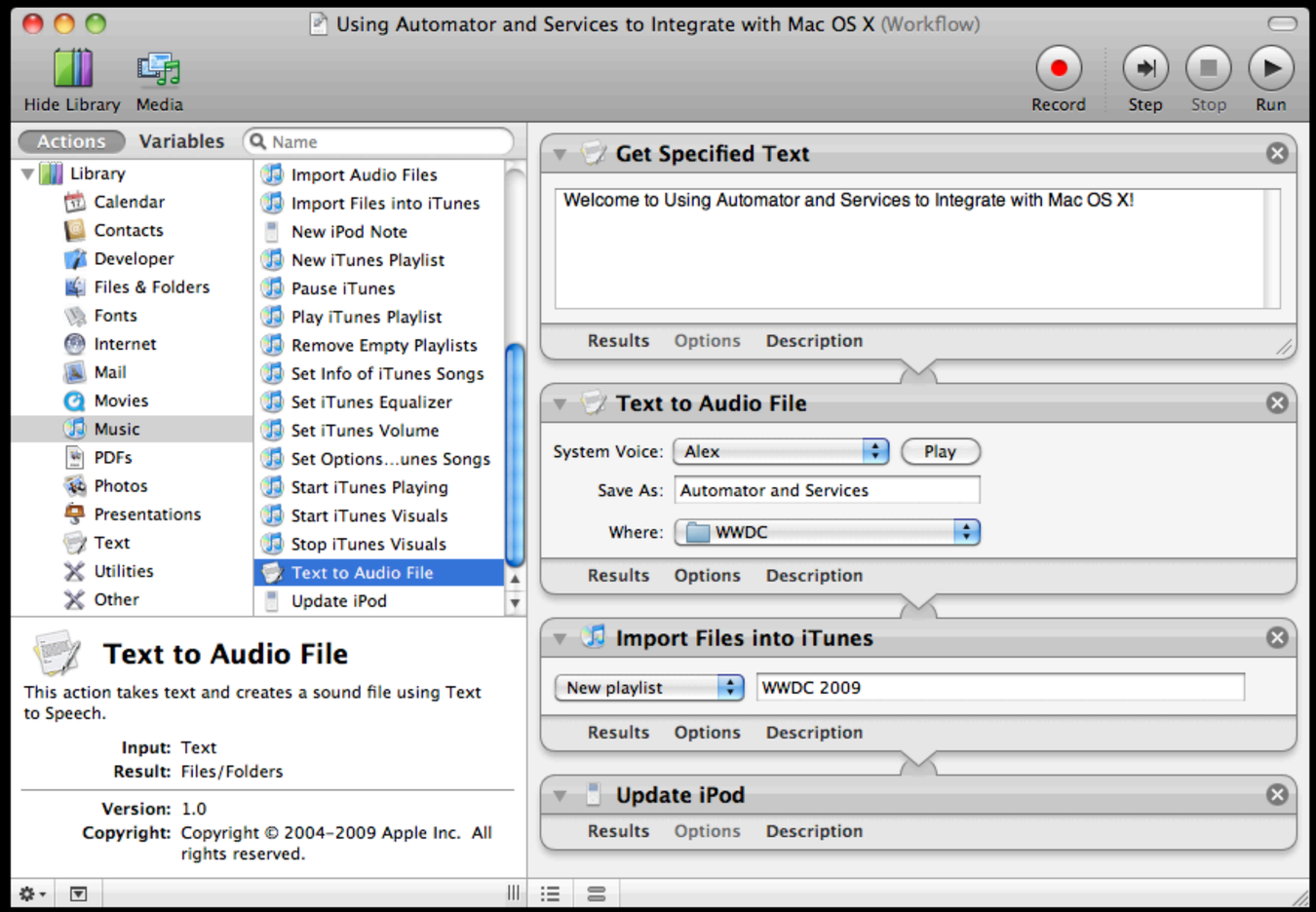
What Is Automator?

- Automate repetitive tasks
- Customize your system
- Workflow
- Action



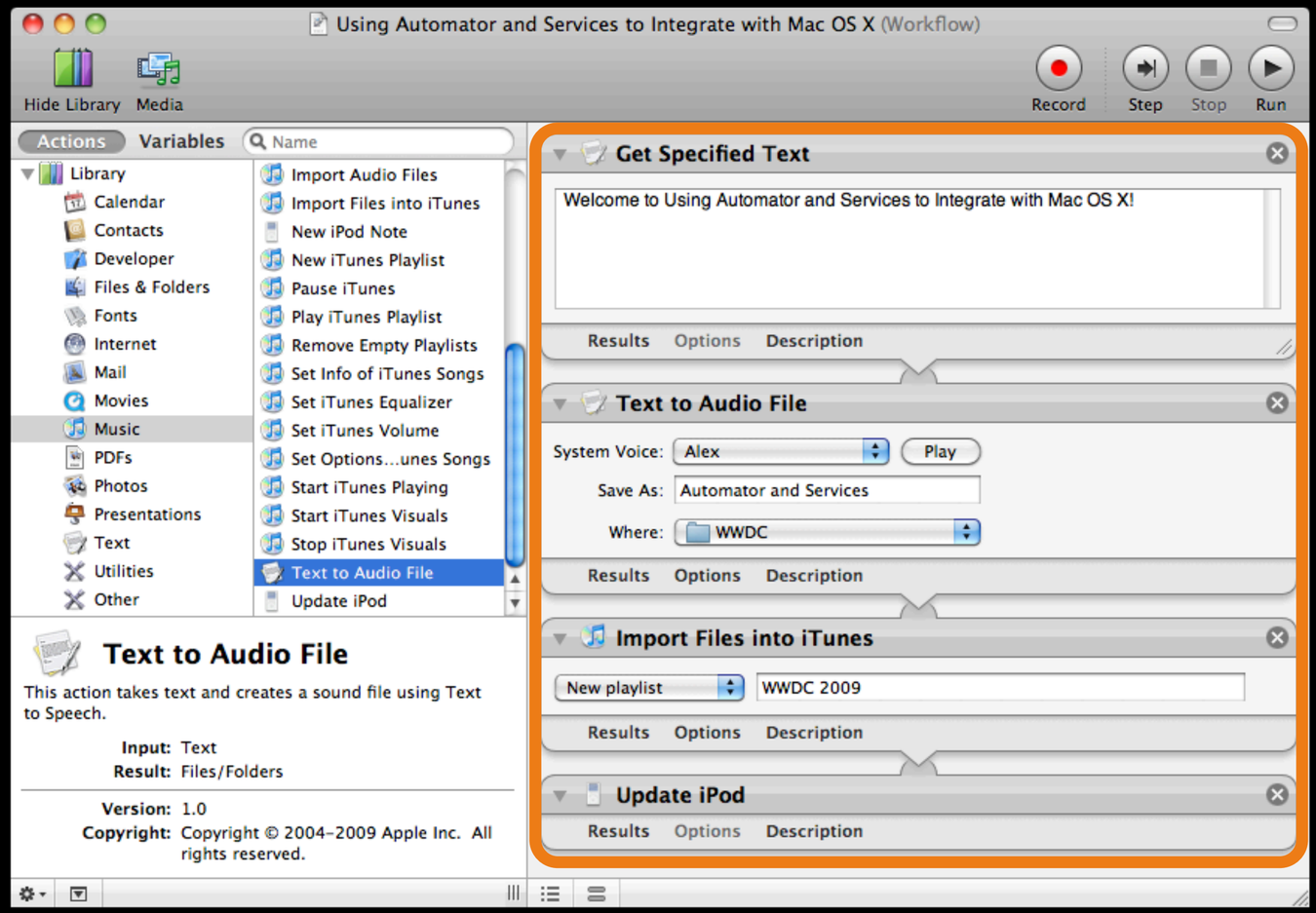
What Is Automator?

Automator



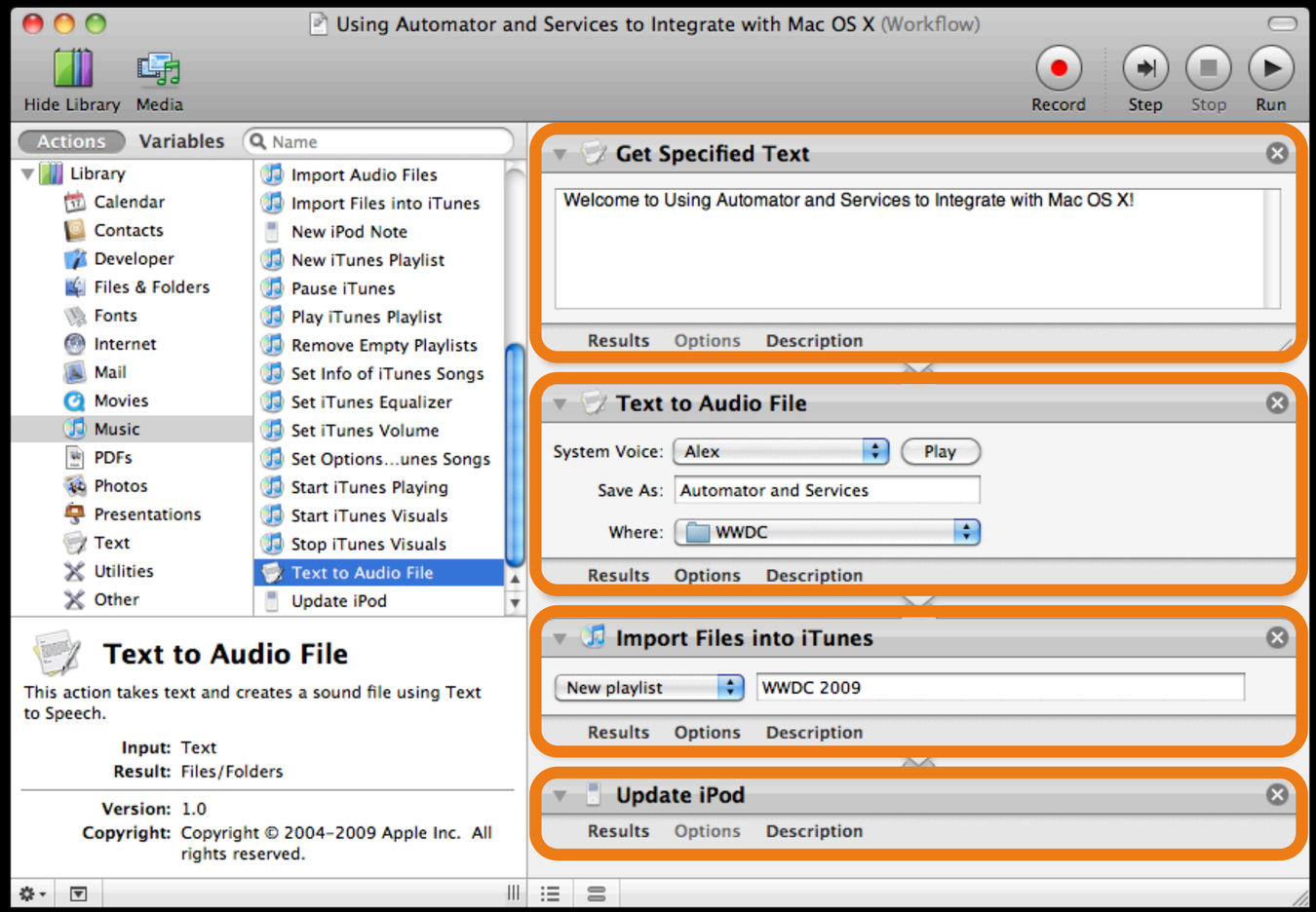
What Is Automator?

Workflow



What Is Automator?

Action

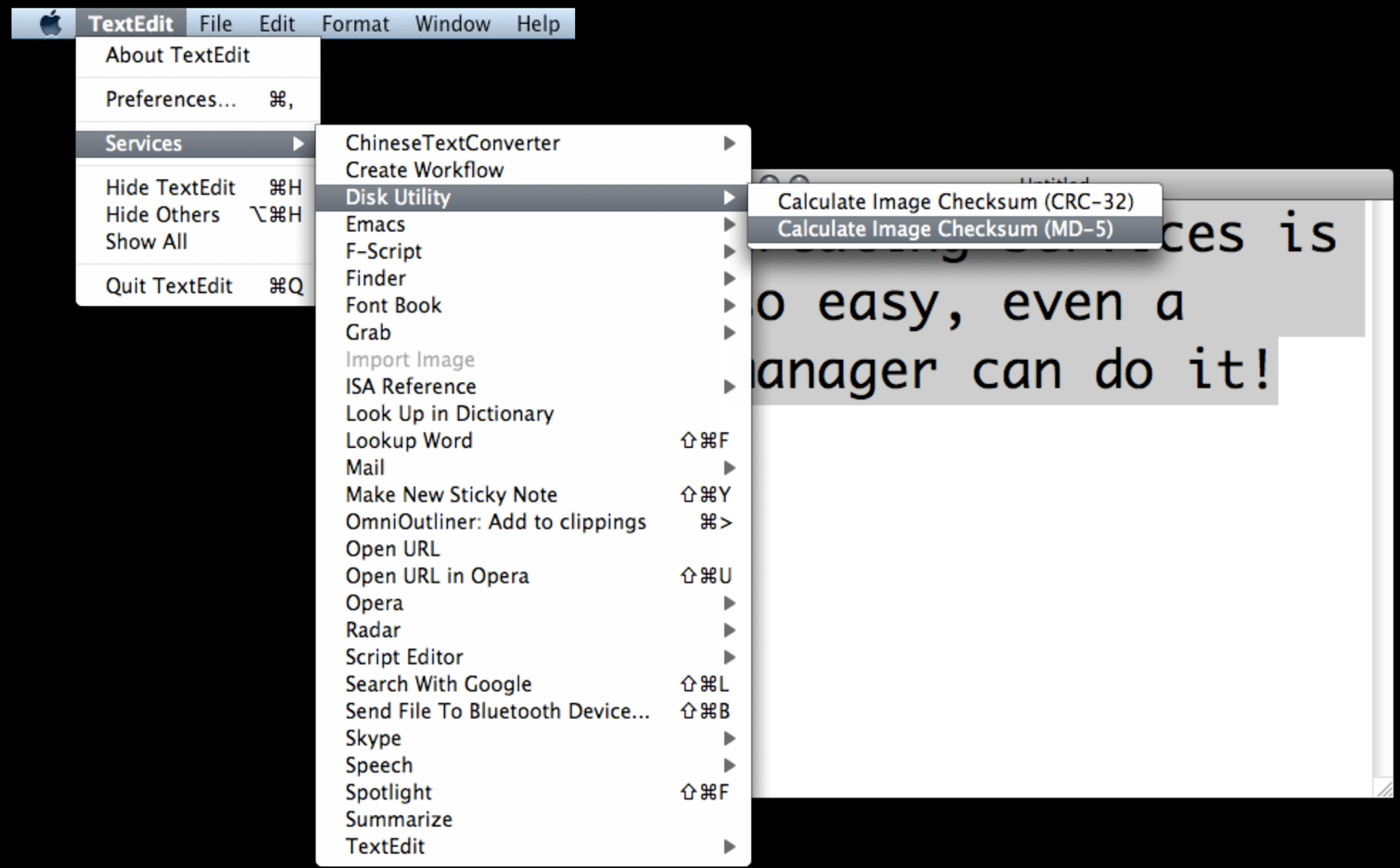


What Can You Do with Workflows?

- Stand-alone applications
- Folder actions
- Print plugins
- iCal alarms
- Image Capture plugins
- Finder plugins
- Services (new!)

Workflows and Automation

Services in Leopard



Talk Is Cheap

- Tour of Automator
- Create Automator workflows
- Customize your system

Automator Demo

What You Just Learned

- Whirlwind tour of Automator
- Create workflows using Automator actions
- Customize system behavior using services

workflows

actions

Running Workflows in Your Application

Automator and Your Application

Join the Party

Empower Your Users

- Make your application customizable
- Keep users loyal to your application

What Do I Have To Do?

- Nothing!
- Watch the Pasteboard and Services session

Pasteboards, Services, and Interoperability on Mac	North Beach Thursday 2:00PM

- Write one line of code!

Automator Framework

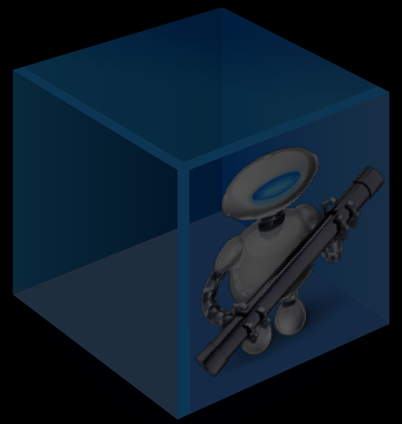
AMWorkflow

AMWorkflowController

AMWorkflowView

Automator Framework

AMWorkflow



AMWorkflowController

AMWorkflowView

AMWorkflow

```
id output = [AMWorkflow runWorkflowAtURL:url
                                withInput:input
                                    error:&error];
```

AMWorkflow

```
id output = [AMWorkflow runWorkflowAtURL:url
                                withInput:input
                                    error:&error];
```

One Line of Code? Prove It.

- AMWorkflow
- Extend application functionality
- User-customizable features

Running Workflows in Your Application Demo

Itai Rom
Automator Engineer

What You Just Learned

- Run workflows in your application using AMWorkflow
- Allow users to customize your application
- Just one line of code!

workflows

actions

Creating Automator Actions

Finder File Edit View Go Window Help

Mon 10:50 AM

Applications

DEVICES
Hard Drive
iDisk

PLACES
Desktop
apple
Applications
Documents

SEARCH FOR
Today
Yesterday
Past Week
All Images
All Movies
All Documents

Address Book
Adobe Bridge CS4
Adobe Device Central CS4
Adobe Drive CS4
Adobe Extension Manager CS4
Adobe Illustrator CS4
Adobe Media Player
Adobe Photoshop CS4
AppleScript
Automator
BBEdit
Bento
Calculator
Chess
Dashboard
DemoMonkey
Dictionary
DVD Player
Exposé
FileMaker Pro 10 Advanced
Firefox
Font Book
Front Row
iCal
iChat
Image Capture
iMovie
iPhoto
iSync
iTunes
iWeb
iWork '09
Mail
Microsoft Office 2008
OmniGraffle Professional
OmniOutliner Professional
Photo Booth
Preview
QuickTime Broadcaster
QuickTime Player
Safari
Server
Skype
Spaces
Stickies
System Preferences
TextEdit
TextMate
Time Machine
Transmit

51 items, 127.43 GB available

Finder File Edit View Go Window Help

Mon 10:50 AM

Applications

DEVICES
Hard Drive
iDisk

PLACES
Desktop
apple
Applications
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SEARCH FOR
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AppleScript
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Chess
Dashboard
DemoMonkey
Dictionary
DVD Player
Exposé
FileMaker Pro 10 Advanced
Firefox
Font Book
Front Row
iCal
iChat
Image Capture
iMovie
iPhoto
iSync
iTunes
iWeb
iWork '09
Mail
Microsoft Office 2008
OmniGraffle Professional
OmniOutliner Professional
Photo Booth
Preview
QuickTime Broadcaster
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iSync
iTunes
iWeb
iWork '09
Mail
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QuickTime Broadcaster
QuickTime Player
Safari
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Skype
Spaces
Stickies
System Preferences
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Time Machine
Transmit

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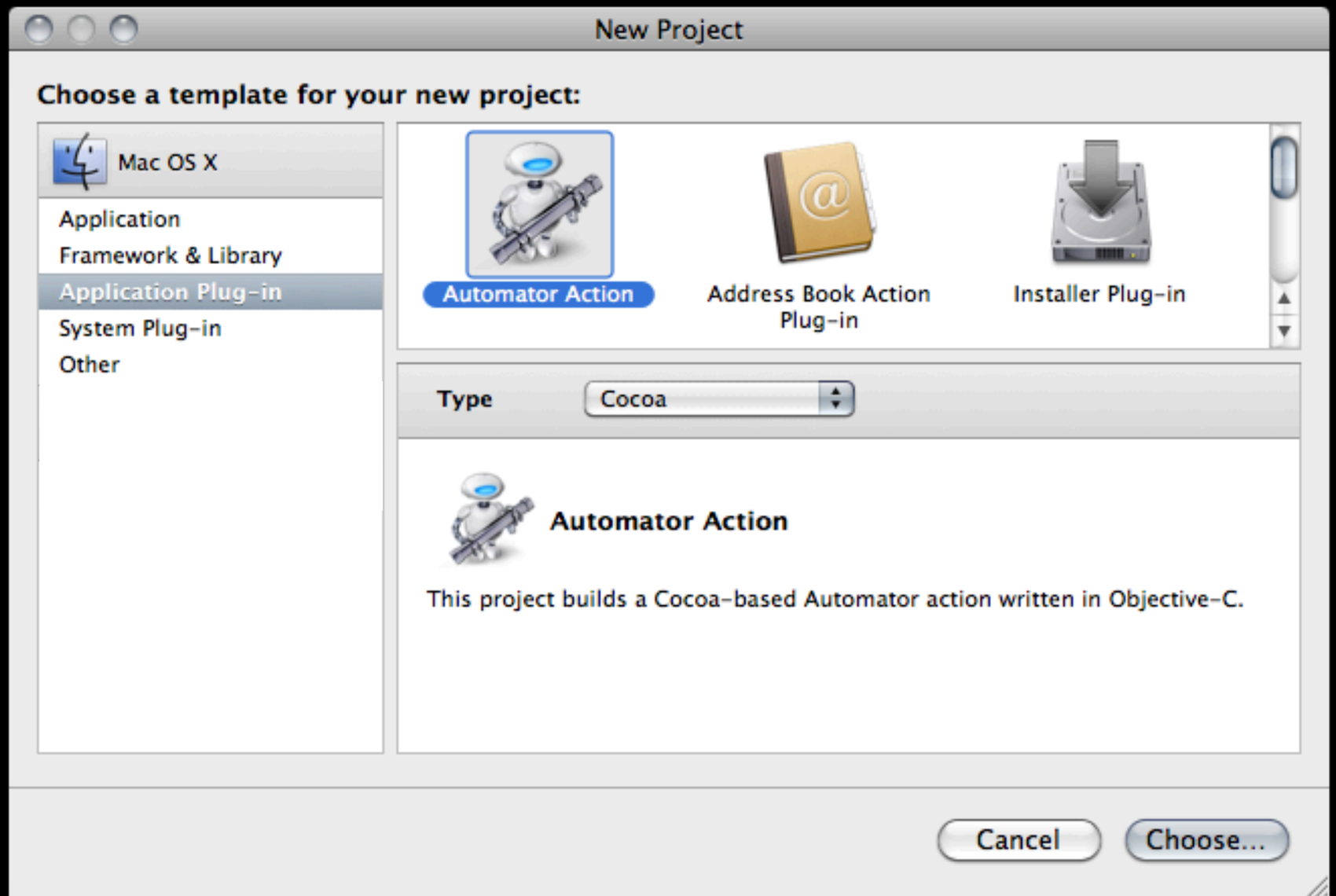
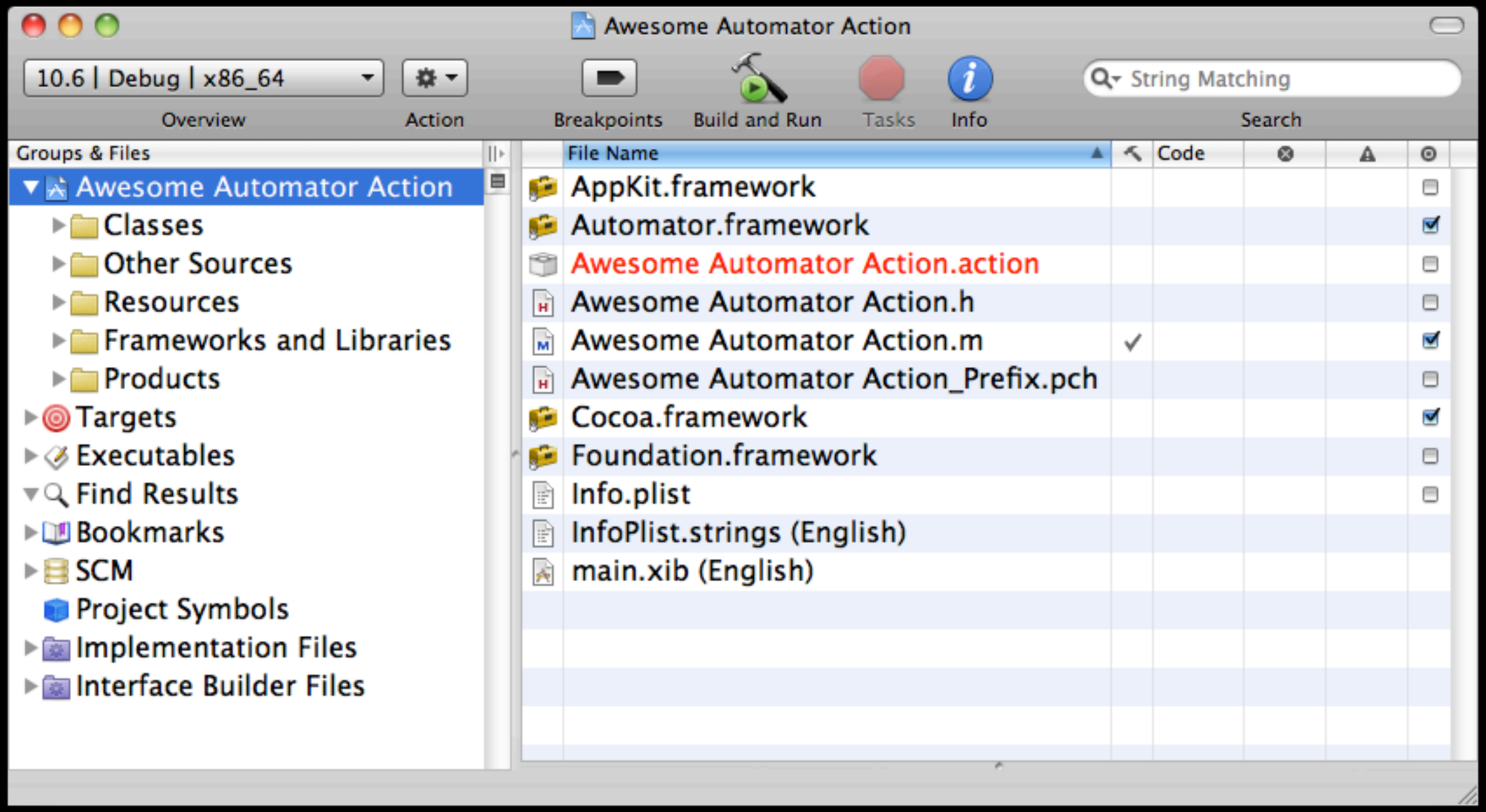
Same Great Tools!

Automator Action Template

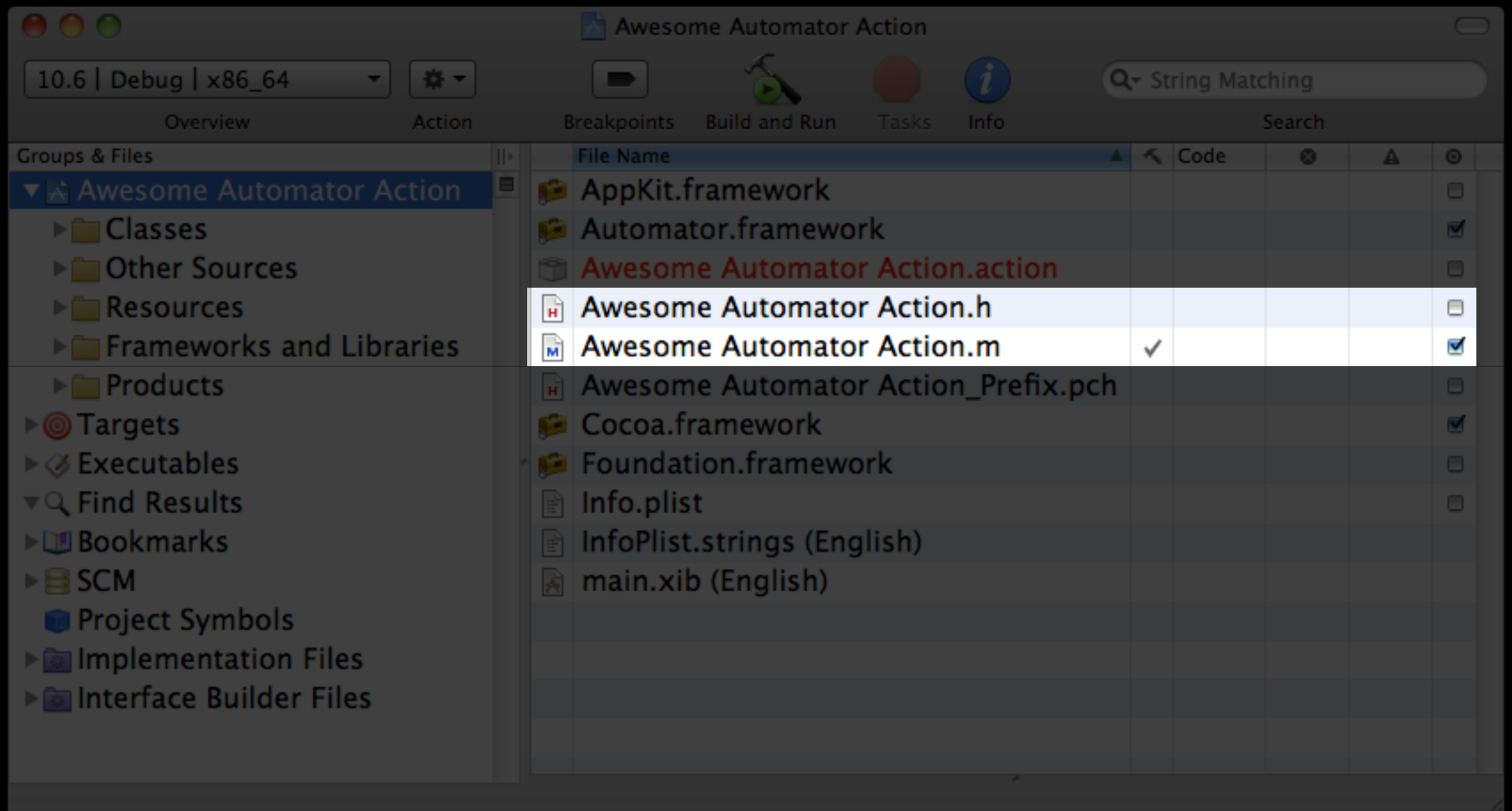


Automator Action Project



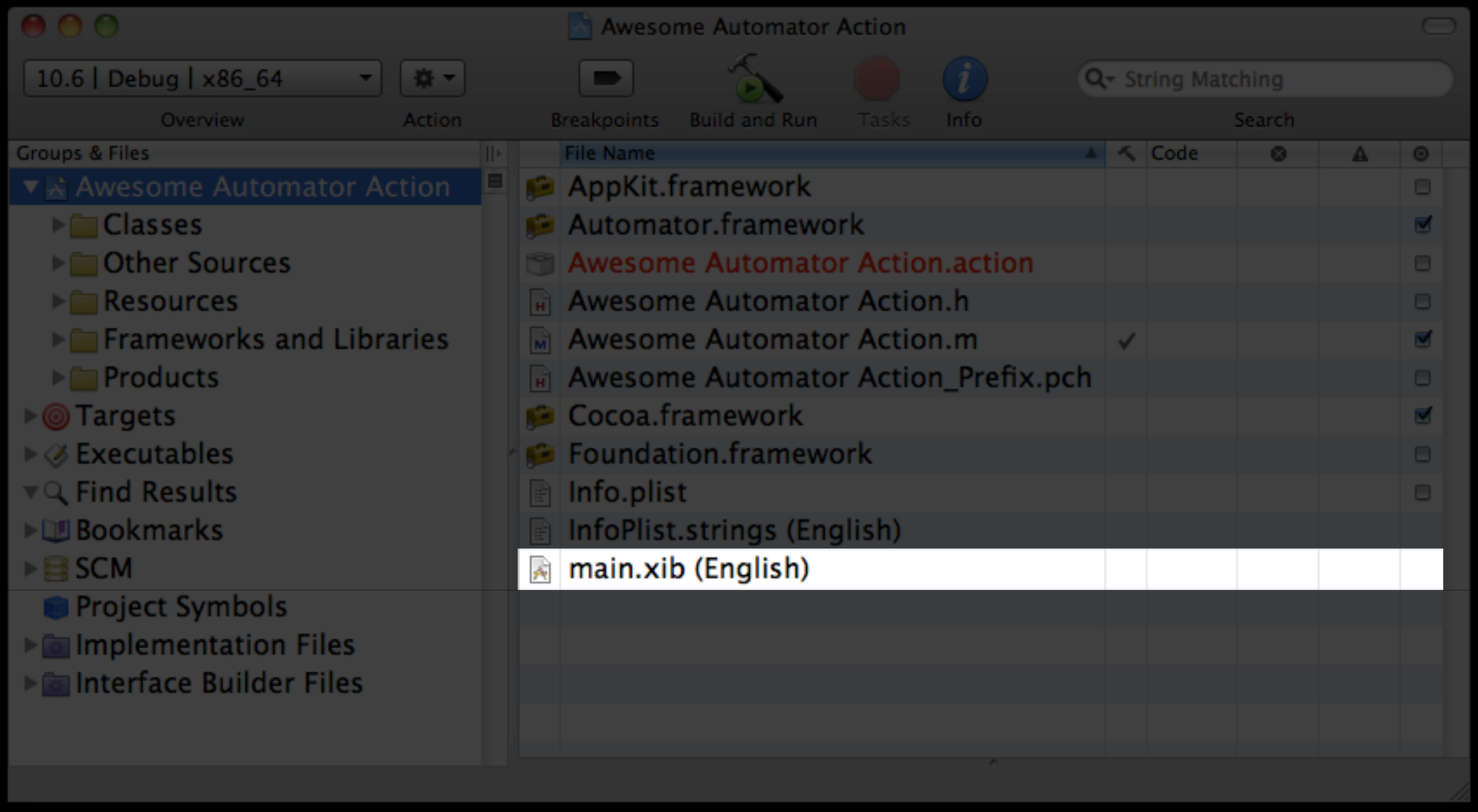
Automator Action Project

Source files



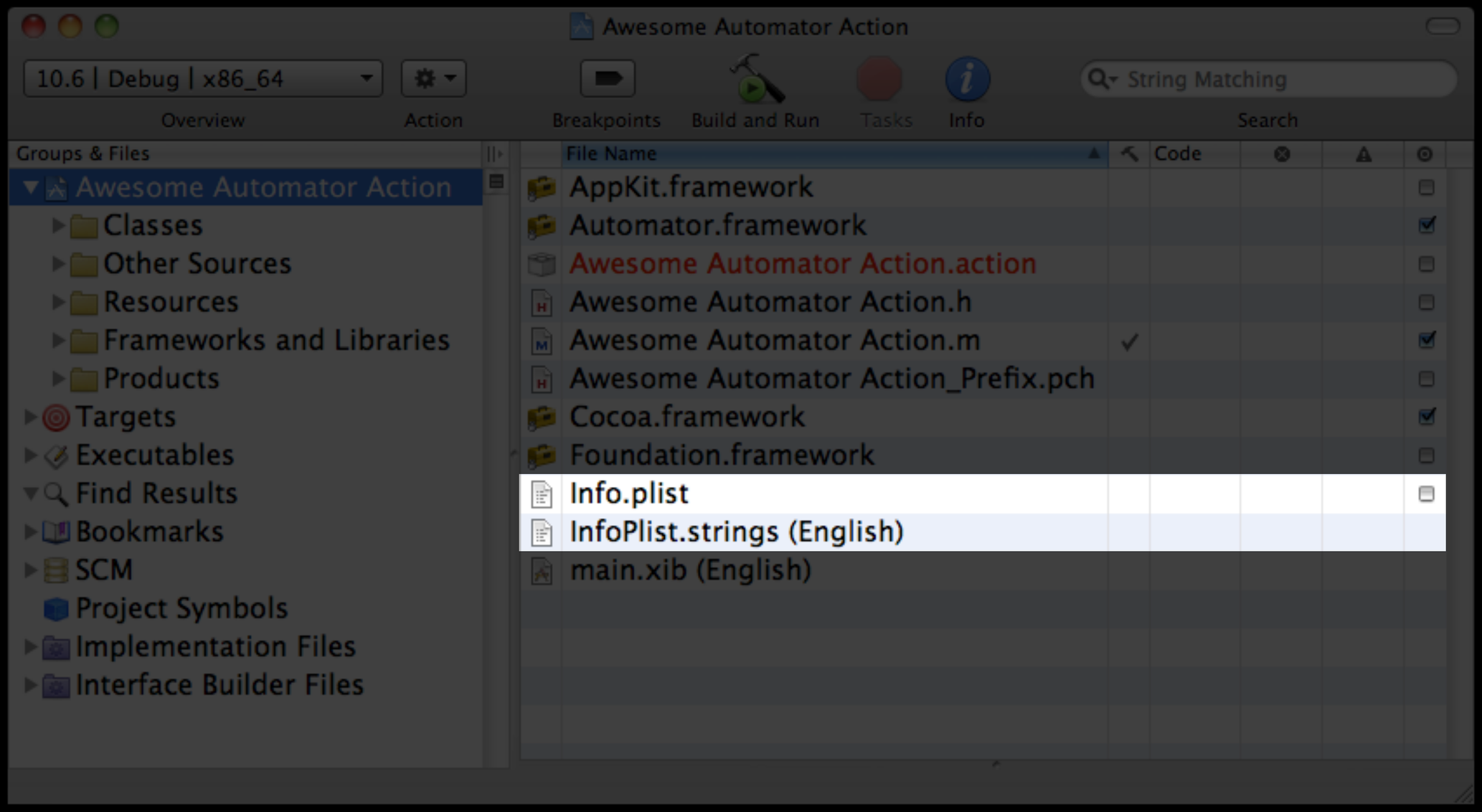
Automator Action Project

User interface



Automator Action Project

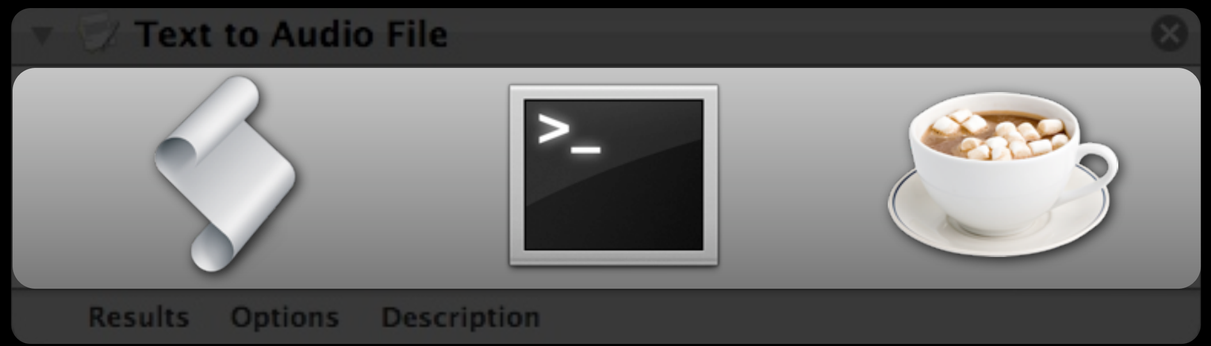
Action properties



Automator Action Components

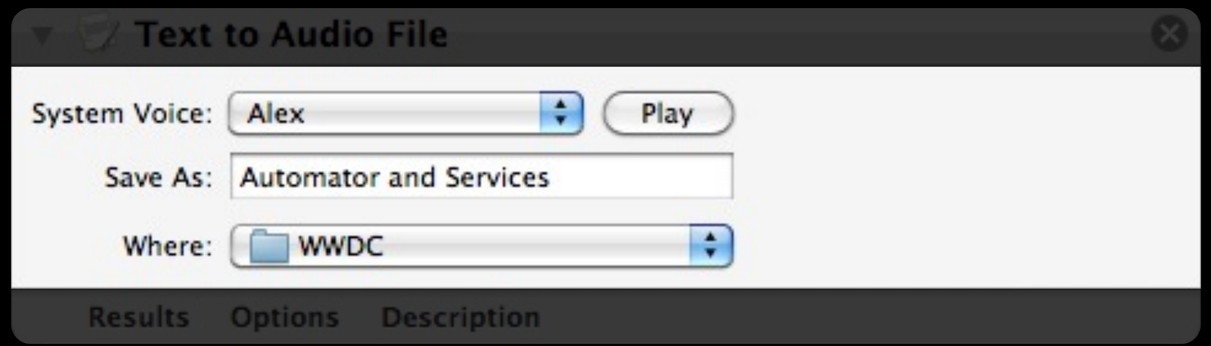
Automator Action Components

- Source files



Automator Action Components

- Source files
- User interface

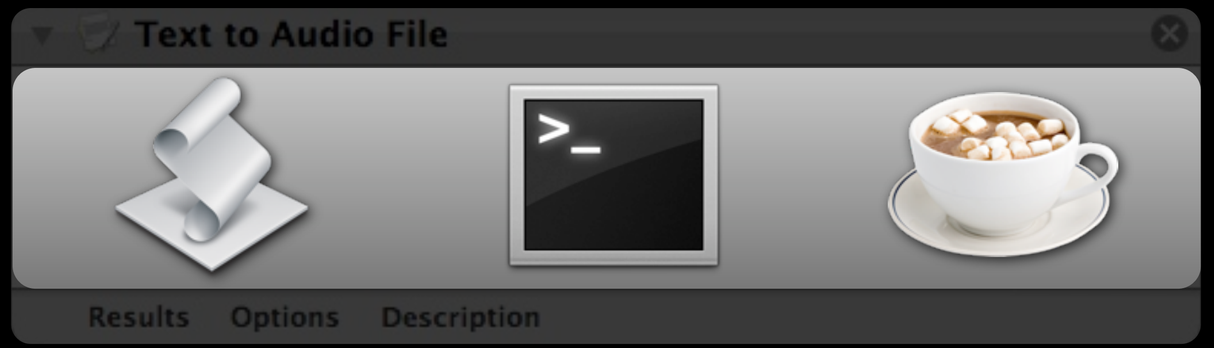


Automator Action Components

- Source files
- User interface
- Action properties

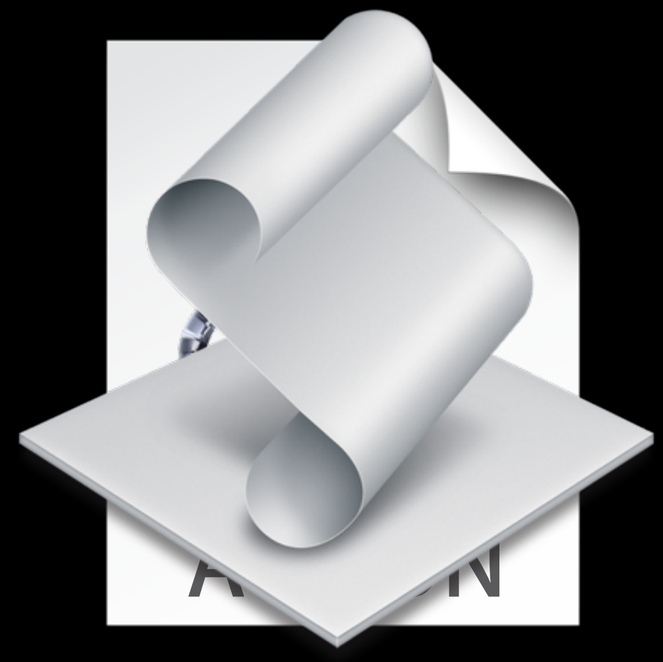
Automator Action Components

- Source files
- User interface
- Action properties



Source Files

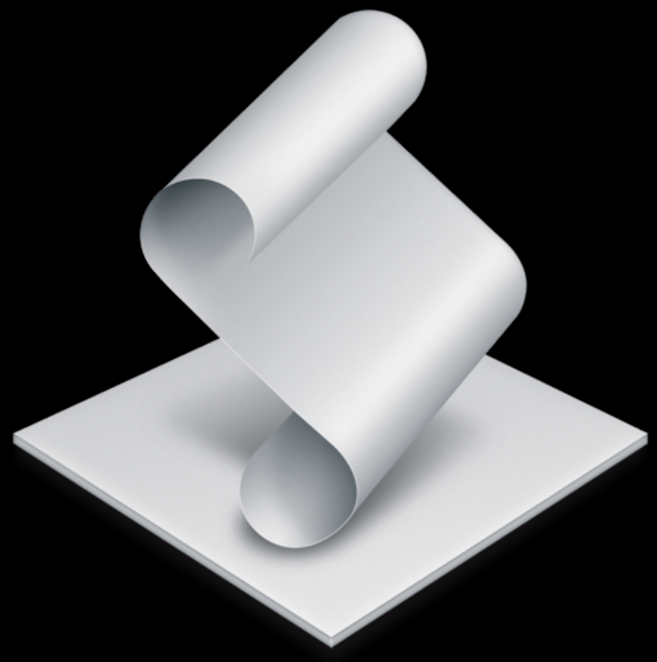
- AppleScript



Source Files

- AppleScript

!=



Source Files

- AppleScript

```
on run {input, parameters}

    return input
end run
```

Source Files

- ~~AppleScript~~ AppleScriptObjC

```
on runWithInput_fromAction_error_(input, anAction, errorRef)
    -- Add your code here.


    return input
end runWithInput_fromAction_error_
```

Source Files

- AppleScriptObjC

```
on runWithInput_fromAction_error_(input, anAction, errorRef)
    -- Add your code here.

    return input
end runWithInput_fromAction_error_
```

AppleScript and Cocoa Bridge	North Beach Friday 10:30AM

Source Files

- AppleScriptObjC
- Scripting languages

Source Files

- AppleScriptObjC
- Scripting languages

```
#!/usr/bin/env sh

echo “I’m a shell action”
```

```
#!/usr/bin/python

print “I’m a python action”
```

```
#!/usr/bin/tclsh

puts “I’m a tcl action”
```

Source Files

- AppleScriptObjC
- Scripting languages
- Objective-C

Source Files

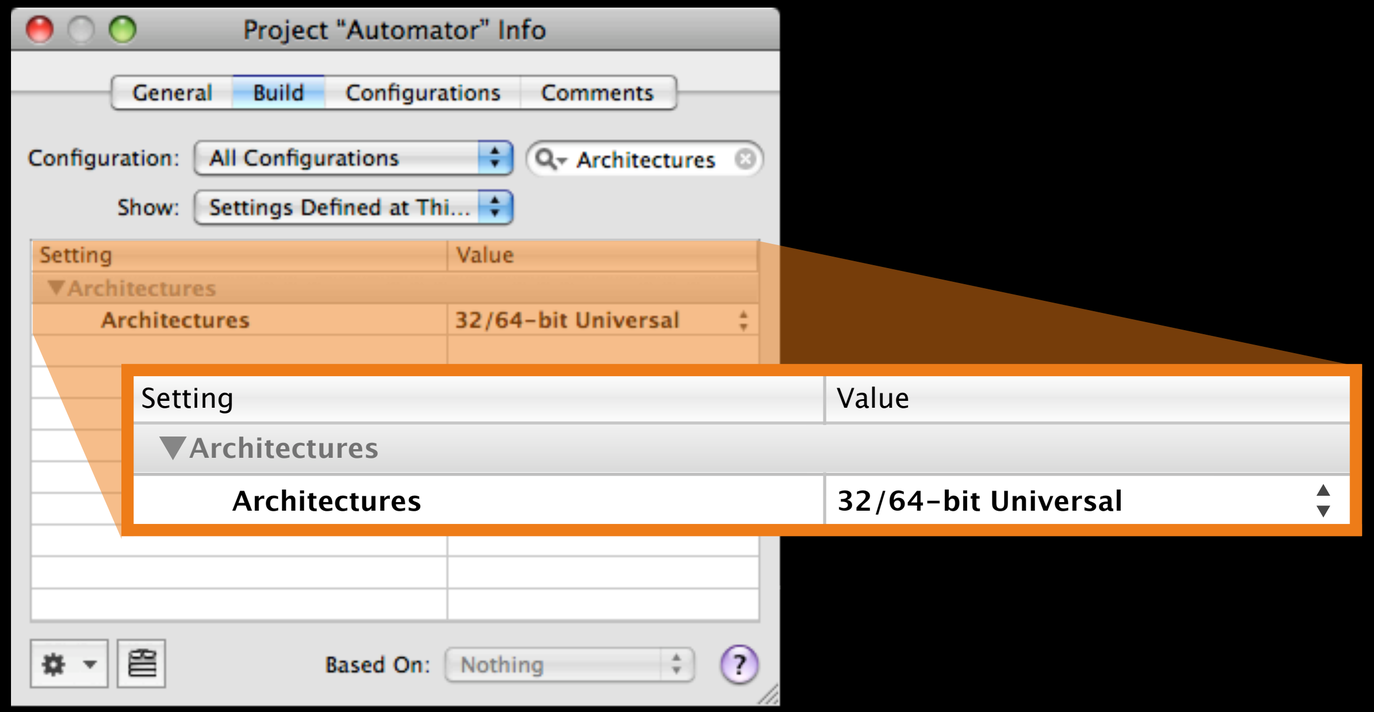
- AppleScriptObjC
- Scripting languages
- Objective-C

```
- (id)runWithInput:(id)input
        fromAction:(AMAction *)anAction
             error:(NSDictionary **)errorInfo
{
    // Add your code here.

    return input;
}
```

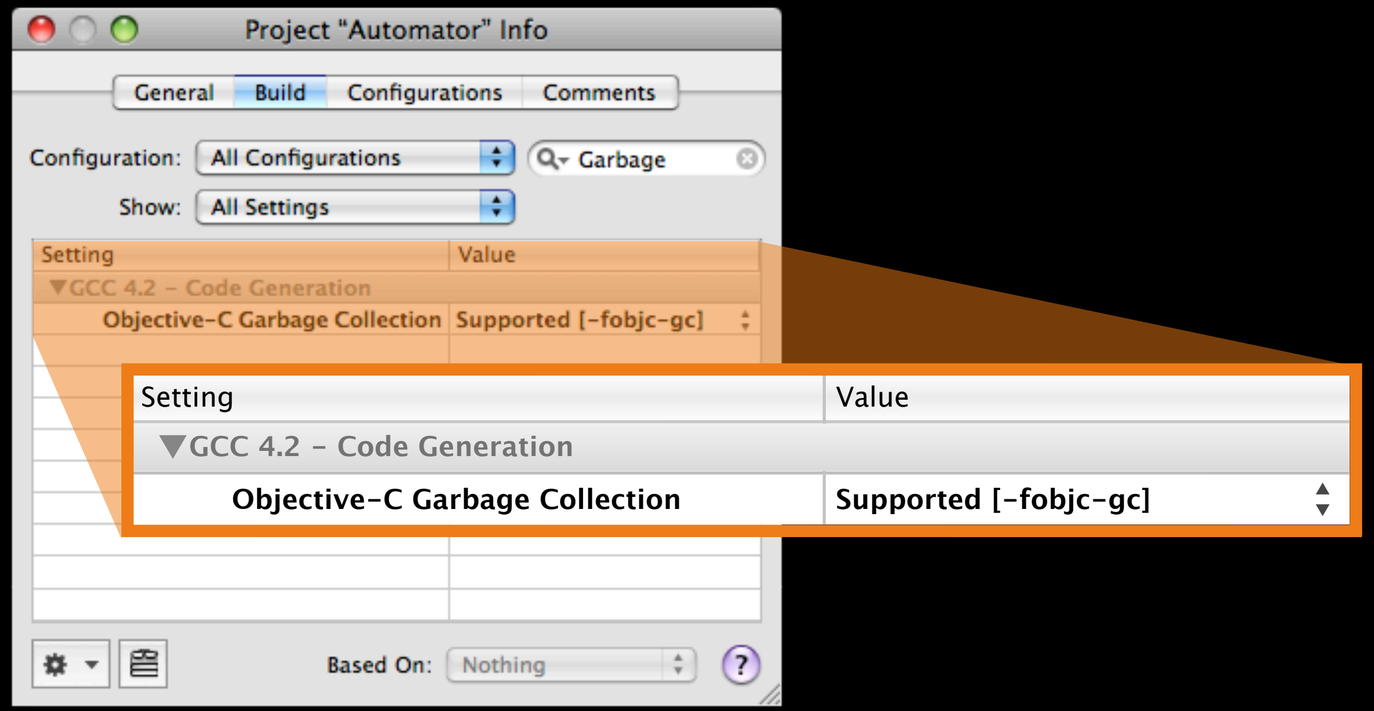
Source Files

- AppleScriptObjC
- Scripting languages
- Objective-C
  - 64-bit



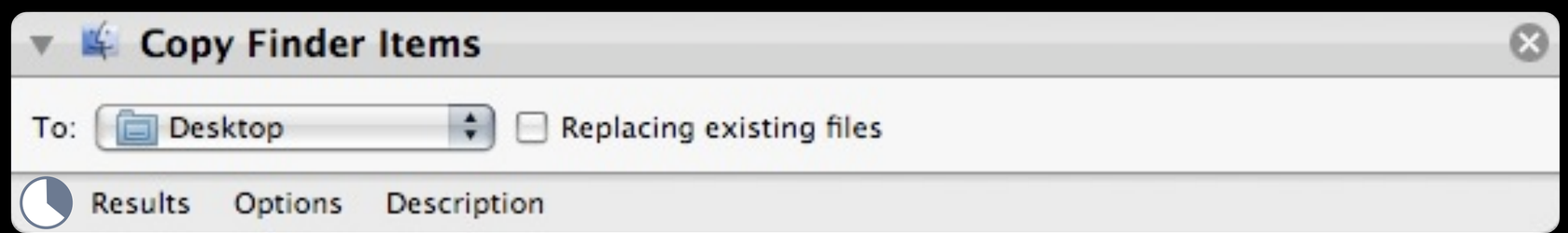
Source Files

- AppleScriptObjC
- Scripting languages
- Objective-C
  - 64-bit
  - Garbage collection



Source Files

- AppleScriptObjC
- Scripting languages
- Objective-C
  - 64-bit
  - Garbage collection
  - Determinate progress



Source Files

- AppleScriptObjC
- Scripting languages
- Objective-C
  - 64-bit
  - Garbage collection
  - Determinate progress

```
// AMAction.h

- (CGFloat)progressValue;
- (void)setProgressValue:(CGFloat)value;
```

Source Files

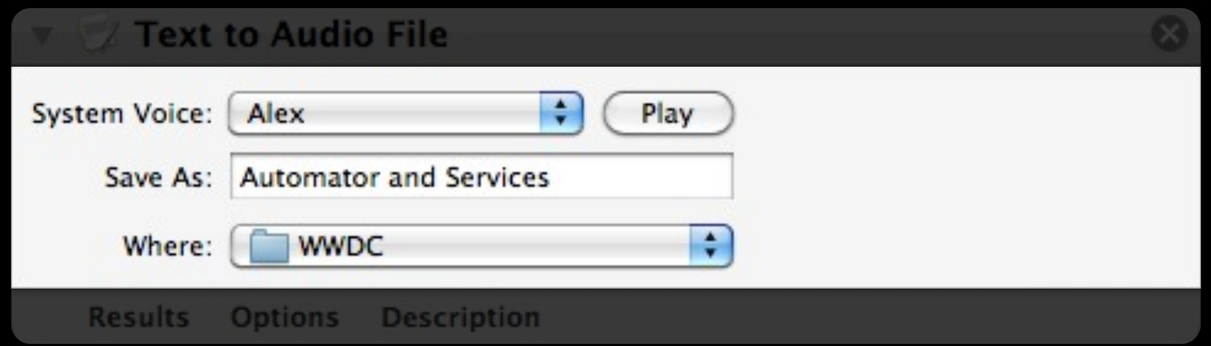
- AppleScriptObjC
- Scripting languages
- Objective-C
  - 64-bit
  - Garbage collection
  - Determinate progress

```
// AMAction.h

- (CGFloat)progressValue;
- (void)setProgressValue:(CGFloat)value;
```

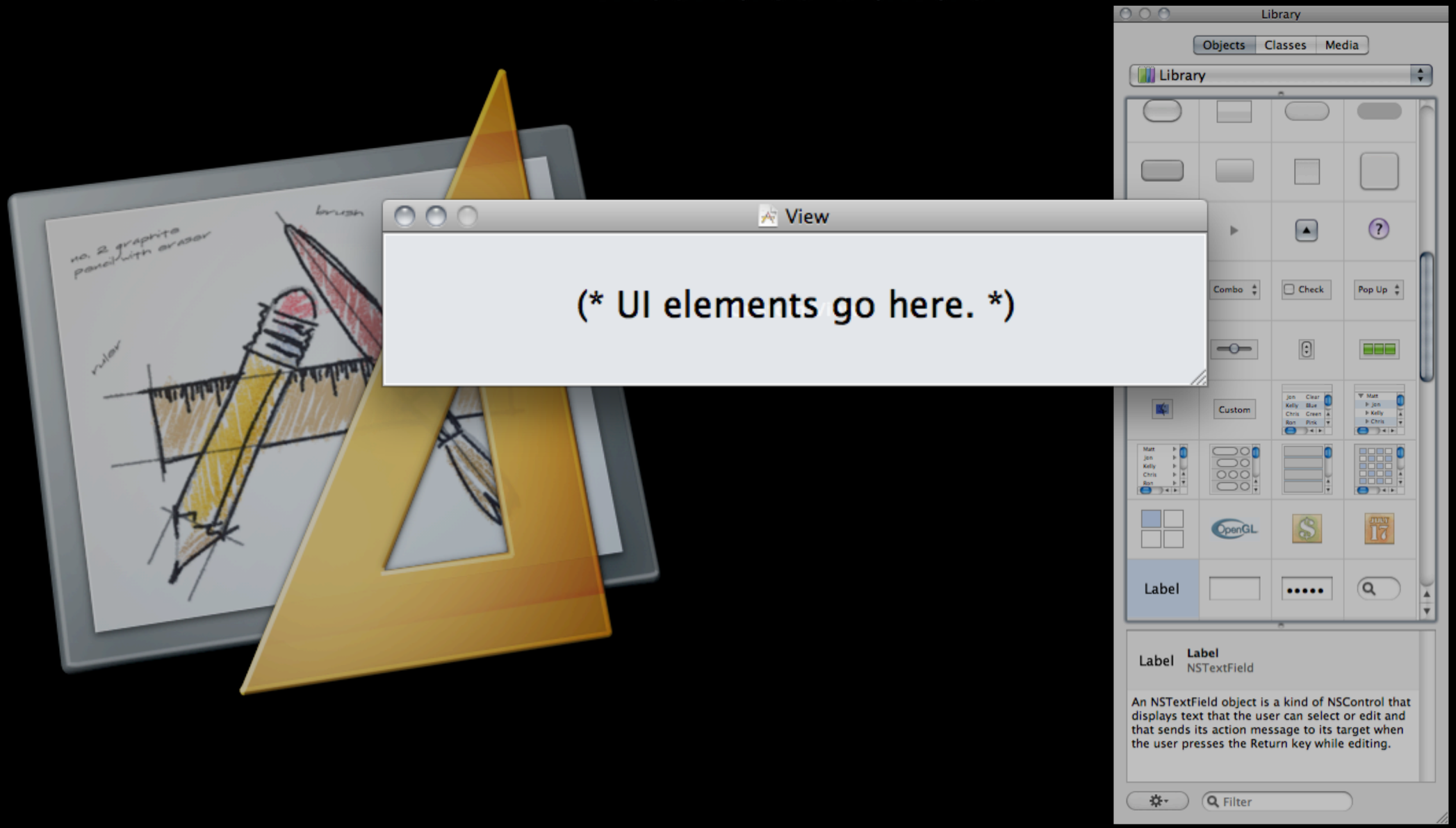
Automator Action Components

- Source code
- User interface
- Action properties



Action User Interface Design

Interface Builder

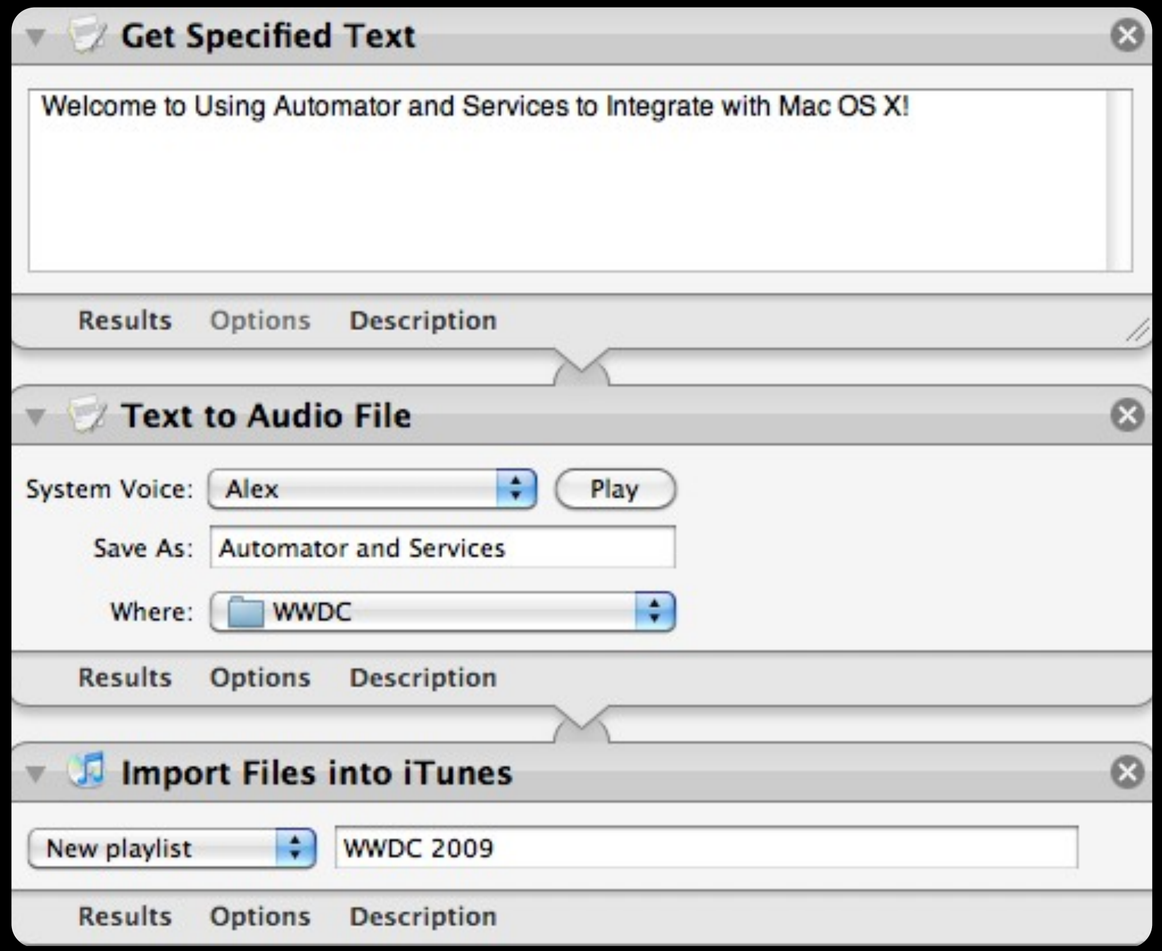


Action User Interface Design

Interface Builder

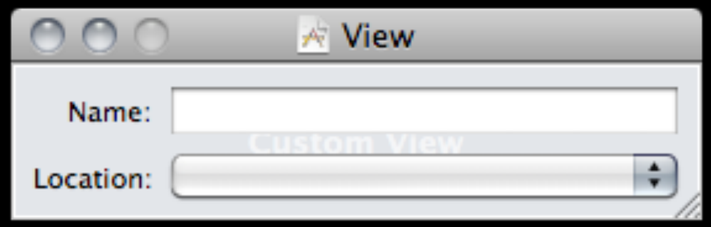
Action Design Guidelines

- Keep it short and simple



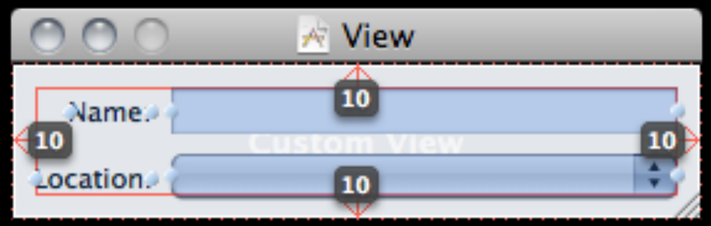
Action Design Guidelines

- Keep it short and simple
- NSSmallControlSize



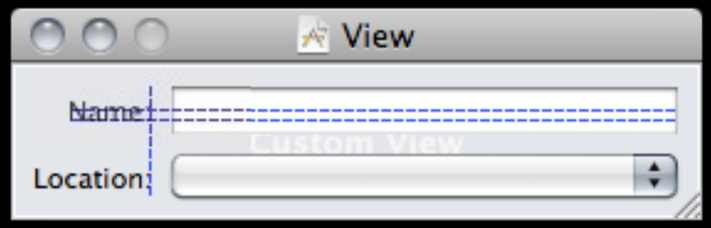
Action Design Guidelines

- Keep it short and simple
- NSSmallControlSize
- Keep 10px borders



Action Design Guidelines

- Keep it short and simple
- NSSmallControlSize
- Keep 10px borders
- Maintain consistent look and feel



Action Design Guidelines

- Keep it short and simple
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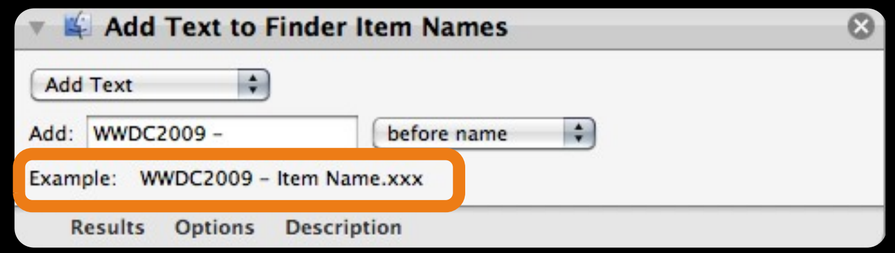


- Give the user visual feedback

Action Design Guidelines

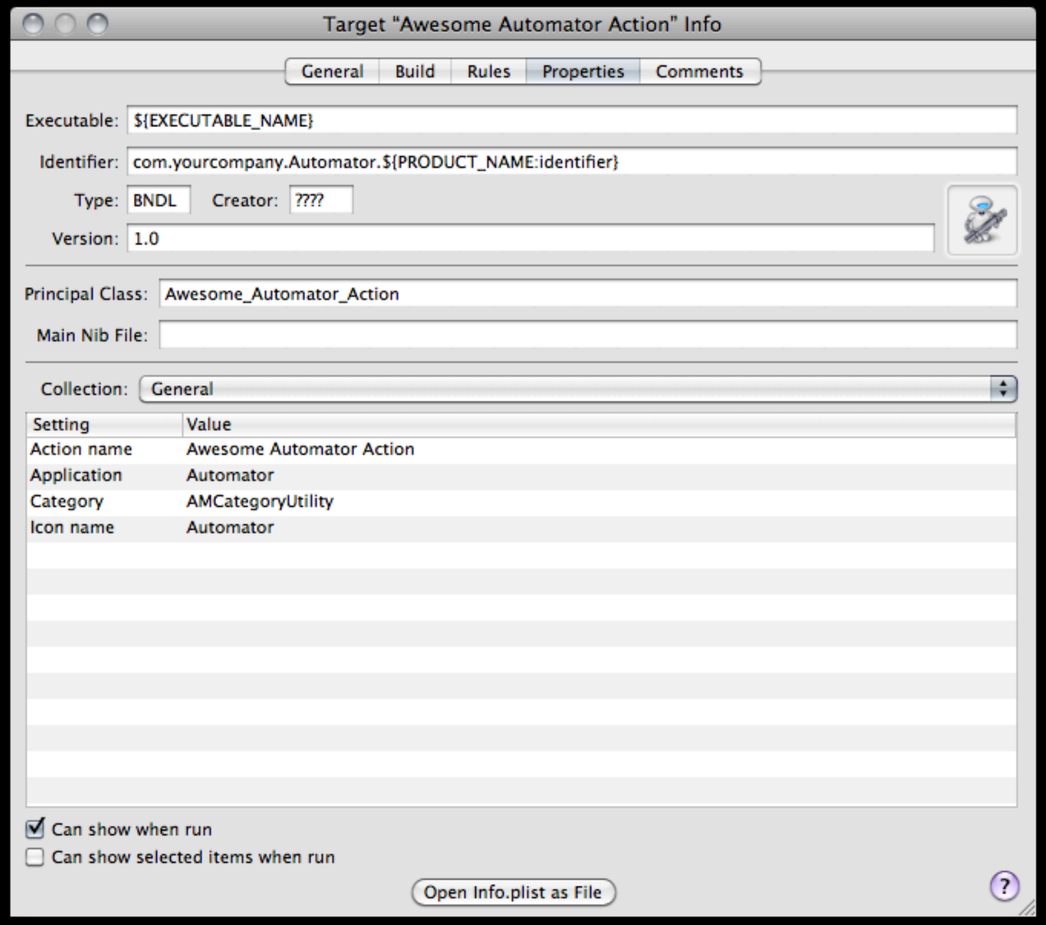
- Keep it short and simple
- NSSmallControlSize
- Keep 10px borders
- Maintain consistent look and feel
- Give the user visual feedback
- Read the Automator Programming Guide

Automator Action Components

- Source code
- User interface
- Action properties

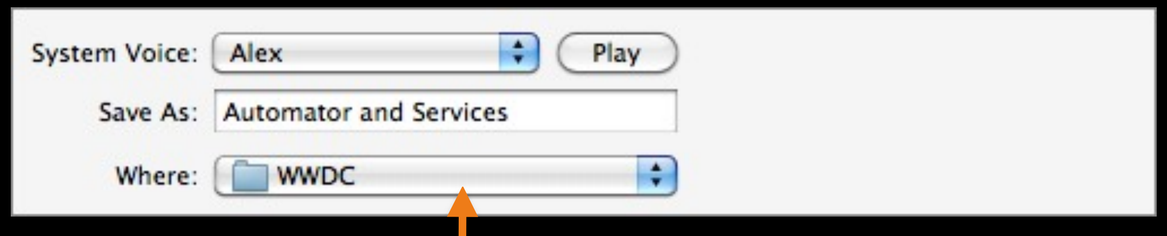
Why Set Action Properties?

- Action functionality
- User-visible polish



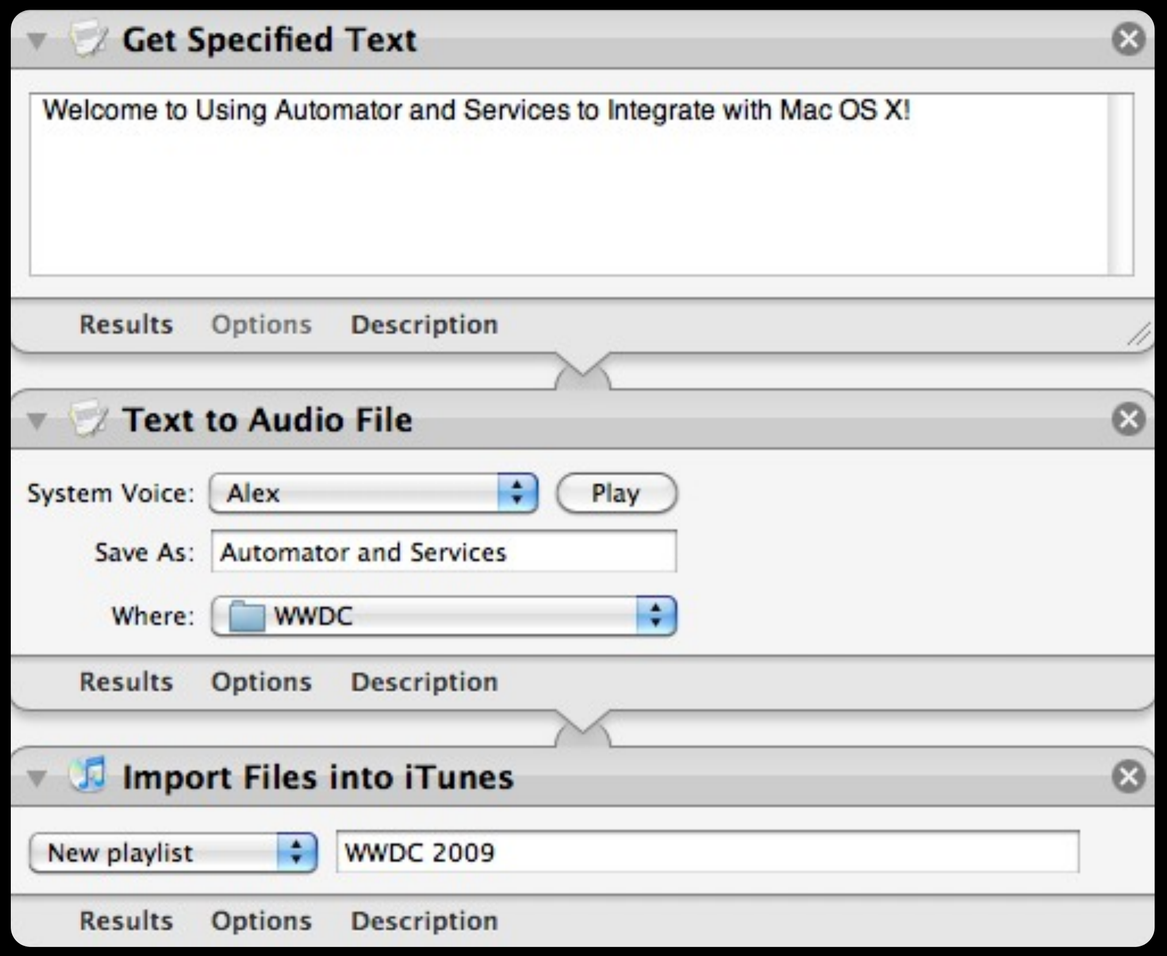
Action Properties

- Parameters

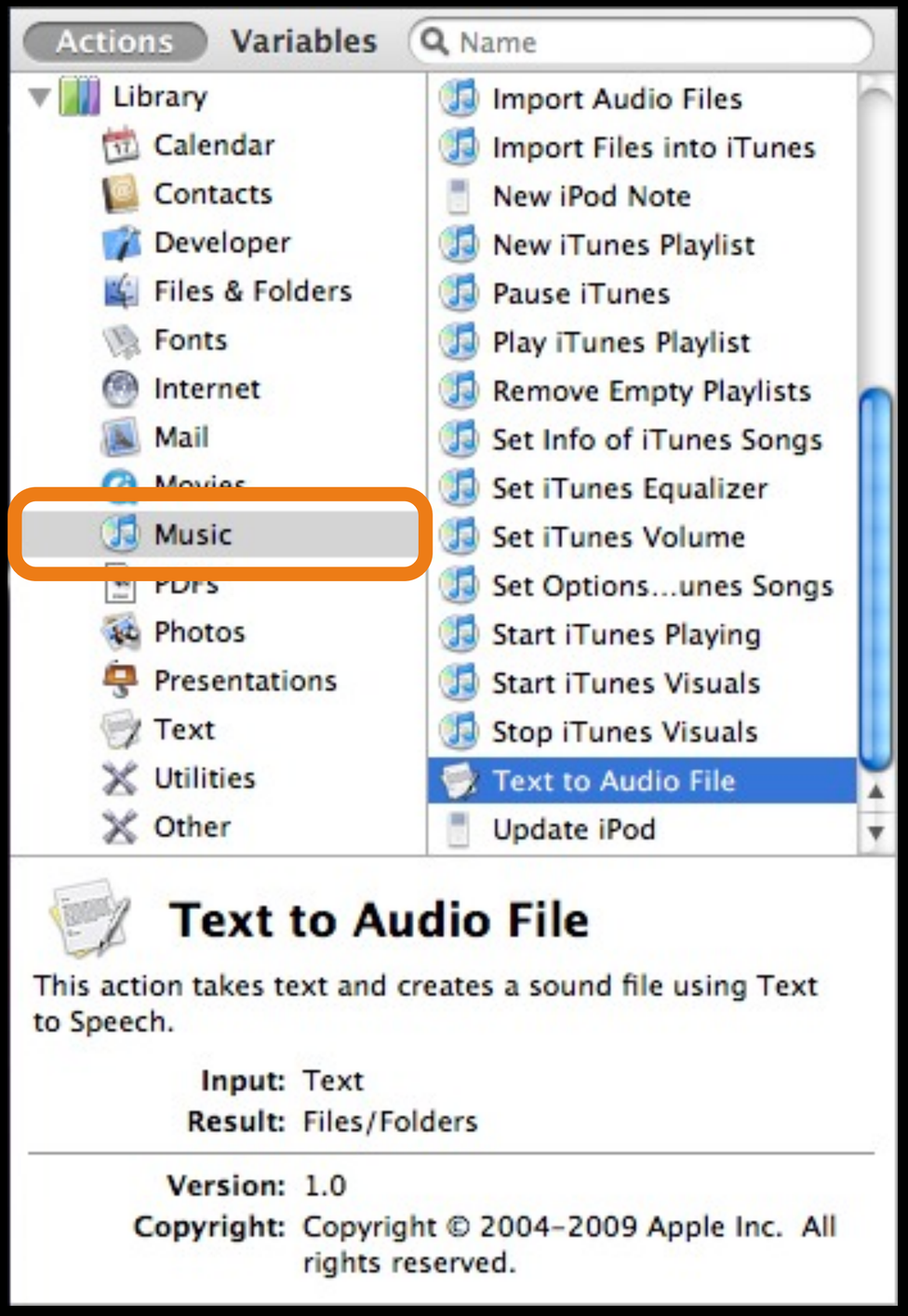



```
location = [[self parameters] valueForKey:@"where"];
```

Action Properties

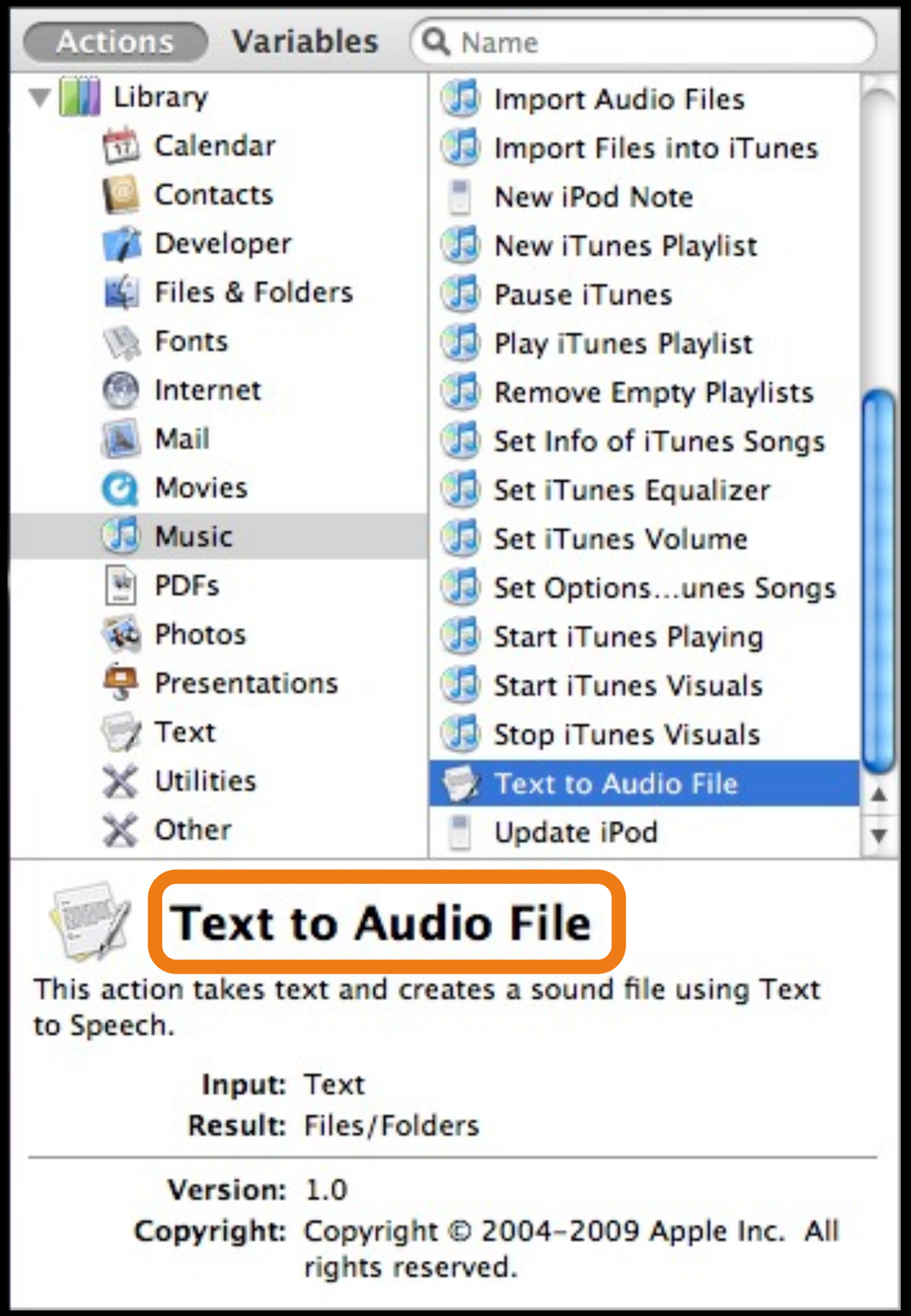


- Parameters
- Input/output types



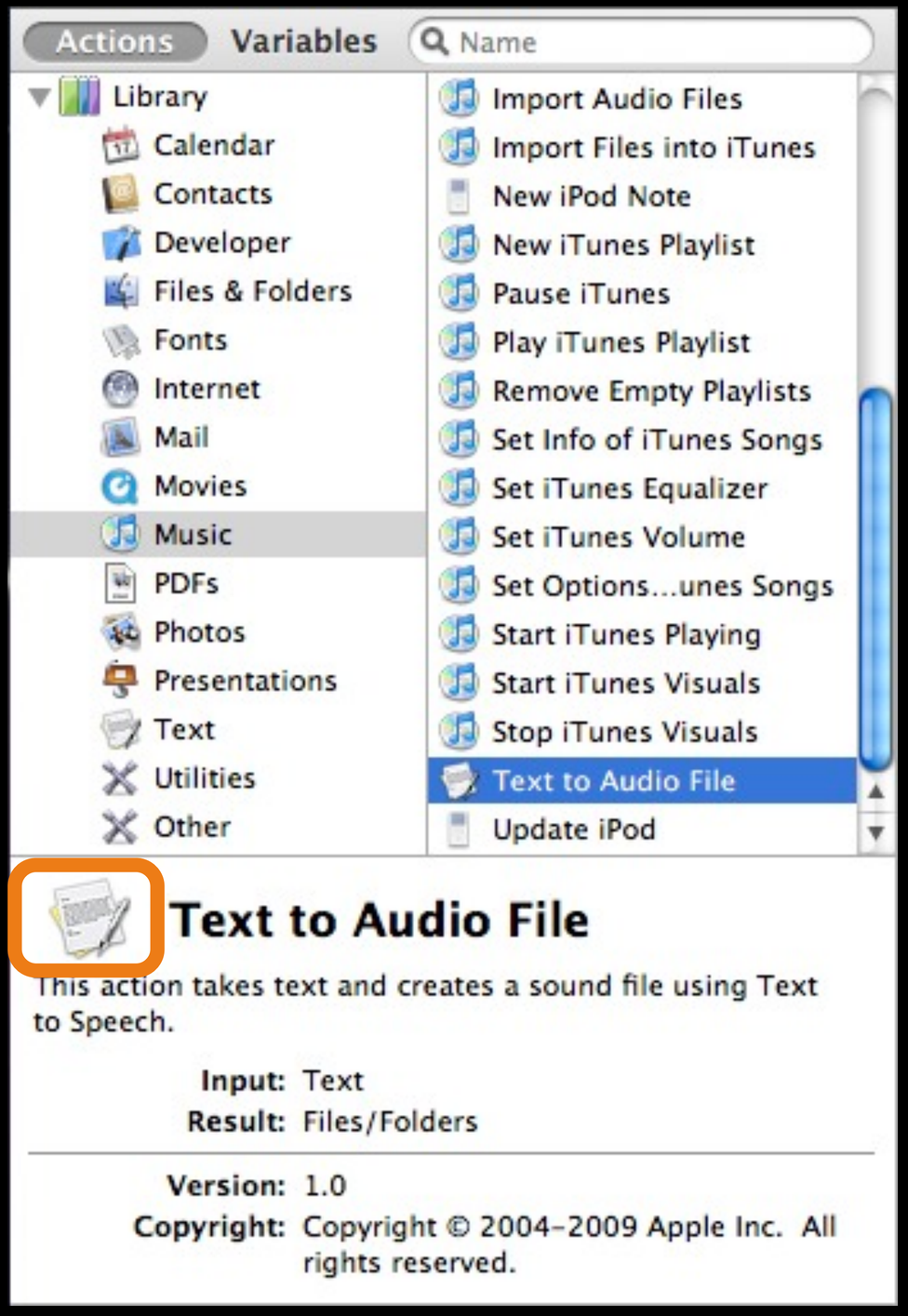
Action Properties

- Parameters
- Input/output types
- Category/application



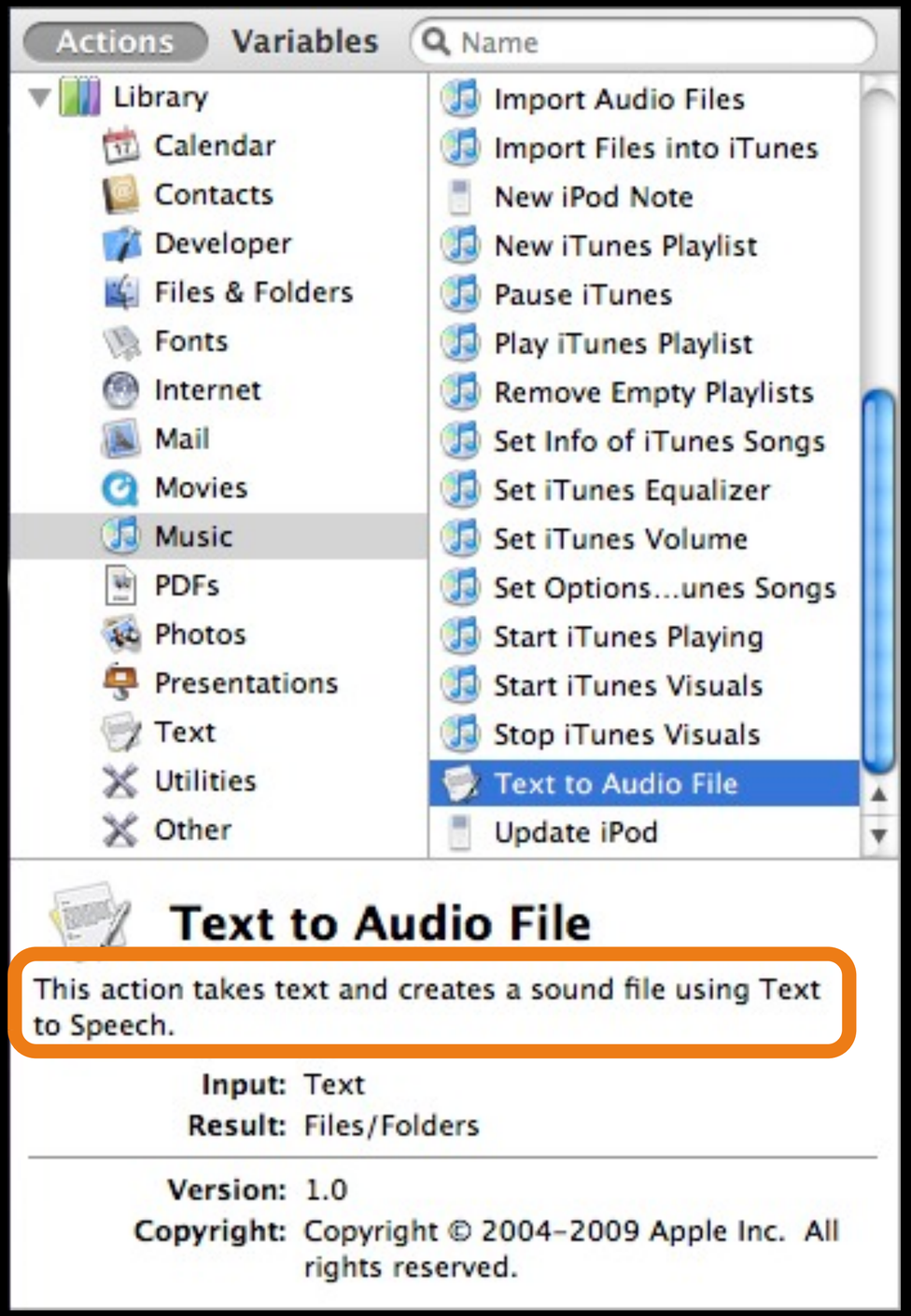
Action Properties

- Parameters
- Input/output types
- Category/application
- Name



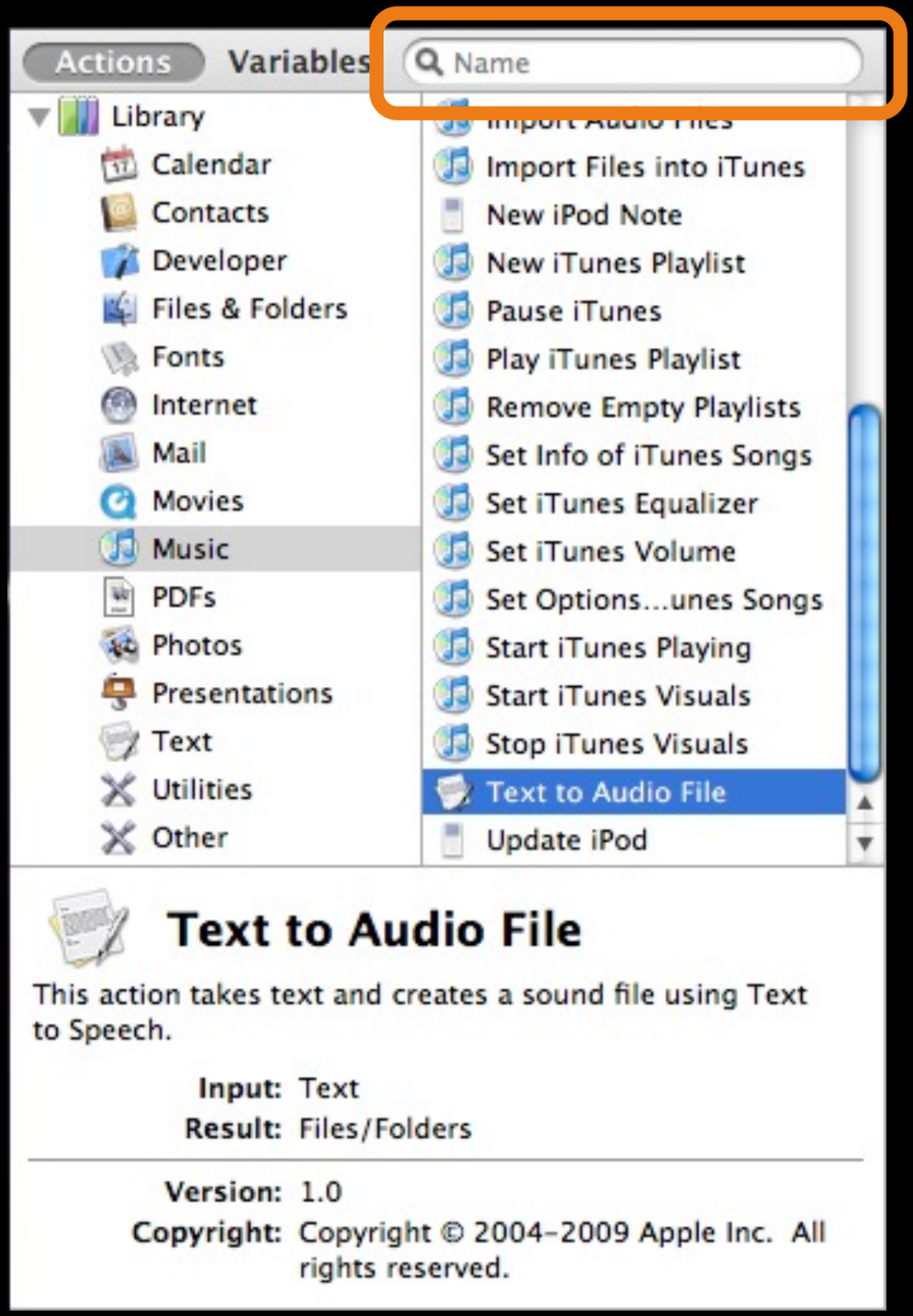
Action Properties

- Parameters
- Input/output types
- Category/application
- Name
- Icon



Action Properties

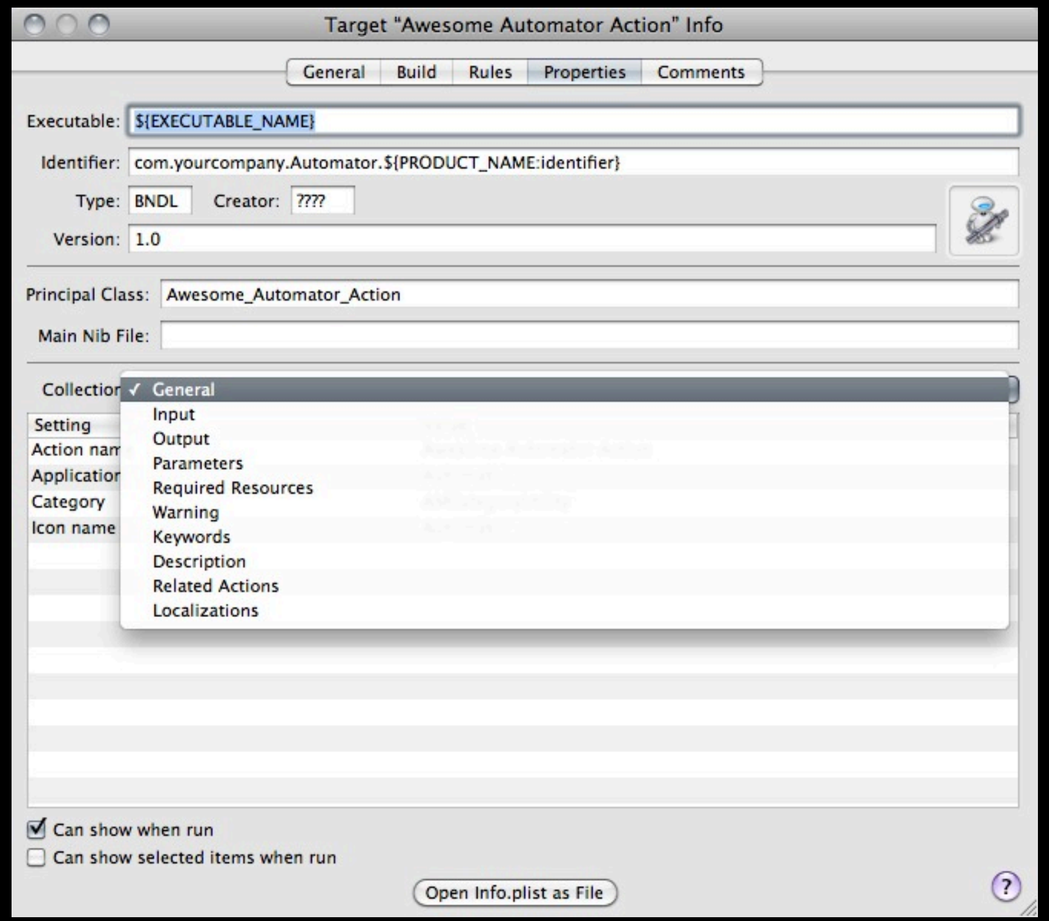
- Parameters
- Input/output types
- Category/application
- Name
- Icon
- Description



Action Properties

- Parameters
- Input/output types
- Category/application
- Name
- Icon
- Description
- Keywords

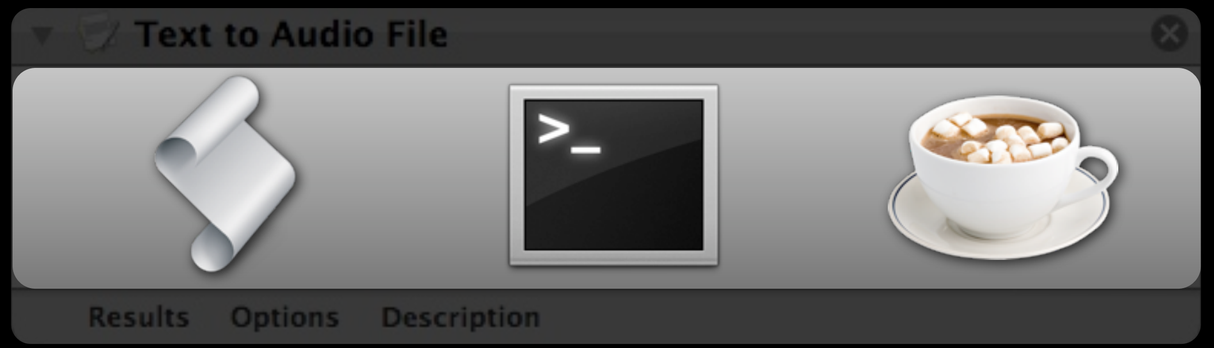
Action Properties



- Parameters
- Input/output types
- Category/application
- Name
- Icon
- Description
- Keywords
- …and more!

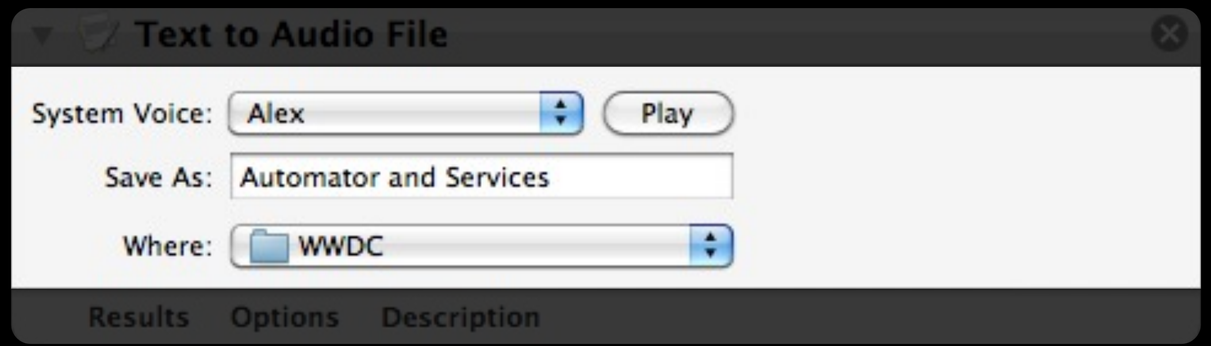
Automator Action Components

- Source code
- User interface
- Action properties



Automator Action Components

- Source code
- User interface
- Action properties



Automator Action Components

- Source code
- User interface
- Action properties

Show Me the Money

- Make an Automator action from scratch
- Implement source code
- Design user interface
- Set action properties
- Build, run, and deploy
- Integrate with the system

Creating Automator Actions Demo

Itai Rom
Automator Engineer

What You Just Learned

- Create Automator actions using Xcode
- Implement source code
- Design user interface
- Set action properties
- Build, run, deploy
- Integrate action functionality

workflows

actions

What You've Learned Today

- Make your life easier with Automator workflows
- Customize your system using services
- Extend the functionality of your application by running workflows
- Empower your users by allowing them to customize your application
- Integrate your technology into the system with Automator actions

More Information

Matt Drance
Application Frameworks Evangelist
mdrance@apple.com

Automator Developers
Mailing List
http://lists.apple.com

Documentation and Other Resources
Automator Programming Guide
http://developer.apple.com

Related Sessions

Using Services in Snow Leopard for Scripting IT Tasks	Nob Hill Tuesday 5:00PM
Pasteboards, Services, and Interoperability on Mac	North Beach Thursday 2:00PM
AppleScript and Cocoa Bridge	North Beach Friday 10:30AM

Q&A

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